

Claims

1. A method of obtaining substantially pure cannabidiol (CBD) from plant material, which method
5 comprises obtaining a cannabidiol-containing extract of the plant material, dissolving the extract in a solvent to form a solution, removing insoluble material from this solution and evaporating the solvent from the solution to obtain substantially pure
10 cannabidiol.
2. A method according to claim 1 wherein the substantially pure preparation of cannabidiol (CBD) has a chromatographic purity of 95% or greater,
15 preferably 96% or greater, more preferably 97% or greater, more preferably 98% or greater, preferably 99% or greater, and most preferably 99.5% or greater by area normalisation of an HPLC profile.
- 20 3. A method according to claim 2 wherein the substantially pure preparation of cannabidiol has a melting point in the range of from 64 to 66°C.
- 25 4. A method according to claim 2 or claim 3 wherein the substantially pure preparation of cannabidiol comprises less than 1%, preferably less than 0.8%, more preferably less than 0.6%, more preferably less than 0.4%, more preferably less than 0.2% and most preferably less than 0.1% Δ^9 THC.
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5. A method according to any one of claims 1 to 4 wherein the insoluble material is removed by filtration.
- 35 6. A method according to any one of claims 1 to 5 wherein the solvent is a non-polar solvent.
- 40 7. A method according claim 6 wherein the non-polar solvent is substantially less polar than cannabidiol such that impurities which are more polar than cannabidiol are removed.

8. A method according to claim 7 wherein the non-polar solvent is a C5-C12 straight chain or branched alkane or a carbonate ester of a C1-C12 alcohol.

9. A method according to claim 8 wherein the non-polar solvent is pentane, hexane or propyl carbonate.

10. A method according to claim 9 wherein the non-polar solvent is pentane.

11. A method according to any one of the preceding claims wherein the cannabidiol-containing extract of the plant material is a botanical drug substance (BDS) derived from the plant material.

12. A method according to claim 11 wherein the botanical drug substance is prepared by a process comprising solvent extraction of the plant material.

13. A method according to claim 12 wherein the botanical drug substance is prepared by extraction with carbon dioxide, ethanol, methanol or hexane.

14. A method according to claim 13 wherein the botanical drug substance is prepared by a process comprising extraction with carbon dioxide (CO₂), followed by a secondary extraction step to remove a proportion of the non-target materials.

15. A method according to claim 14 wherein the secondary extraction step is ethanolic precipitation.

16. A method according to claim 14 or claim 15 which further includes a charcoal clean-up step.

17. A method according to claim 16 wherein the botanical drug substance is prepared by a process comprising:

- 5 i) decarboxylation of the plant material,
ii) extraction with liquid CO₂, to produce a crude botanical drug substance,
iii) precipitation with C1-C5 alcohol to reduce the proportion of non-target materials,
iv) removal of the precipitate,
v) treatment of the resulting solution with activated charcoal, and
10 vi) removal of C1-C5 alcohol and water, thereby producing a final botanical drug substance.

18. A method of obtaining substantially pure cannabidiol (CBD) from plant material comprising:
15 i) decarboxylation of the plant material,
ii) extraction with liquid CO₂, to produce a crude botanical drug substance,
iii) precipitation with ethanol to reduce the proportion of non-target materials,
iv) filtration to remove the precipitate,
20 v) treatment of the resulting solution with activated charcoal,
vi) removal of ethanol and water from the solution to produce a CBD-enriched extract,
v) re-dissolving the CBD-enriched extract in a non-
25 polar solvent that is substantially less polar than cannabidiol such that impurities which are more polar than cannabidiol are removed,
vi) removal of solvent from the solution of step v) to obtain substantially pure CBD.

- 30 19. A method according to claim 18 wherein the non-polar solvent of step v) is pentane.

- 35 20. A method according to any one of claims 1 to 19 wherein the substantially pure cannabidiol is obtained in crystalline form.

- 40 21. A substantially pure preparation of cannabidiol (CBD) having a chromatographic purity of 95% or greater, preferably 96% or greater, more preferably 97% or greater, more preferably 98% or

greater, preferably 99% or greater, and most preferably 99.5% or greater by area normalisation of an HPLC profile.

5 22. A substantially pure preparation of cannabidiol according to claim 21 which is a white crystalline solid at room temperature.

10 23. A substantially pure preparation of cannabidiol according to claim 22 which has a melting point in the range of from 64 to 66°C.

15 24. A substantially pure preparation of cannabidiol according to any one of claims 21 to 23 which comprises less than 1%, preferably less than 0.8%, more preferably less than 0.6%, more preferably less than 0.4%, more preferably less than 0.2% and most preferably less than 0.1% Δ^9 THC.

20 25. A substantially pure preparation of cannabidiol according to any one of claims 21 to 24 which comprises less than 1%, preferably less than 0.8%, more preferably less than 0.6%, more preferably less than 0.4%, more preferably less than 0.2% and
25 most preferably less than 0.1% CBN.

26. A substantially pure preparation of cannabidiol according to any one of claims 21 to 25 which is obtainable from cannabis plant material using
30 a method comprising:
i) decarboxylation of the plant material,
ii) extraction with liquid CO₂, to produce a crude botanical drug substance,
iii) precipitation with ethanol to reduce the
35 proportion of non-target materials,
iv) filtration to remove the precipitate,
v) treatment of the resulting solution with activated charcoal,
vi) removal of ethanol and water from the solution to
40 produce a CBD-enriched extract,
v) re-dissolving the CBD-enriched extract in pentane,

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vi) removal of pentane from the solution of step v) to obtain substantially pure CBD.

5 27. A substantially pure preparation of
cannabidiol substantially as described herein and
having an HPLC profile substantially as shown in
Figure 3.